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| 10/535,636 | 05/20/2005 | Jean-Sebastien Straetmans | DE020285US1 | 7716 |
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

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|------------------------------|--------------------------------------|--|
| Office Action Summary | Application No. 10/535,636 | Applicant(s) STRAETMANS ET AL. |
| | Examiner Thomas A. Hollweg | Art Unit 2879 |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
 - If no period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
 - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED. (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 15 July 2008.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-19 and 21-23 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 1-19 and 21-23 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 15 July 2008 is/are: a) accepted or b) objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All b) Some * c) None of:
1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 7/15/08
- 4) Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) Notice of Informal Patent Application
- 6) Other: _____

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on July 15, 2008, has been entered.
2. Claim 20 is cancelled. Claims 1-19 and 21-23 are currently pending.
3. Amendments to the claims for minor informalities are acknowledged. Objections to the claims are withdrawn.
4. Newly added drawings are acknowledged. Objections to the drawings are withdrawn, including objection with respect to the cermet material.
5. Correction of the typographical error to the number of one of the pending patent applications is acknowledged.

Response to Arguments

6. With respect to claim 10, applicant argues that the prior art of record, GE (GB 1,361,225) does not teach the limitation "filling said discharge vessel with an ionizable filling through at least one feed-through opening, and closing said feed-through opening by arranging a feed through in said opening followed by gas-tight connecting said feed through to the end closure device and/or to the discharge vessel with connection means, whereby a gas-tight high-pressure burner is obtained." In support of this

argument applicant points out that "the [prior art] tube 11 is sealed by pinching and welding after the discharge vessel is filled."

7. The examiner agrees with applicant's characterization of the prior art, but points out that the claim specifically characterizes "closing said feed-through opening." The prior art closes the feed-through opening in a way that anticipates applicant's claim. The fact that an additional pinching and welding step is performed in the prior art does not distinguish applicant's invention, as claimed in claim 10, from the cited prior art.

8. With respect to applicant's arguments that GE ('225) is not analogous art because it teaches a sodium vapor light and applicant's invention is a metal halide lamp. The examiner notes that in the relevant claims (5, 11 22) applicant does not claim a metal halide lamp, but rather a "discharge vessel" and a "gas-tight high-pressure burner." The lamp disclosed in GE ('225) meets both of these limitations.

9. Further, the GE ('225) patent is specifically for a "method of hermetically bonding an alumina component to a component to a component of a refractory metal or alloy having thermal expansion characteristics substantially matching those of the alumina component" (page 1, lines 9-16). Although the specific embodiment described is that of a high pressure sodium vapor lamp, the teachings of the invention are not limited thereto. One having ordinary skill in the art would understand that the invention disclosed by GE ('225), of a superior seal for a high-pressure vessel, is appropriate for use in a metal halide lamp, or an automobile headlight.

10. With respect to applicant's argument that GE ('225) does not teach a coating layer chemically resistant towards oxides and iodides. The coating layer taught by GE

('225) is tungsten. Tungsten is resistant towards oxides and iodides, regardless if oxides or iodides are present in the given embodiment.

11. With respect to applicant's argument for claim 15. Claim 15 is not limited to materials needed for welding, as applicant suggests, but rather for "welding, laser welding, resistance welding, soldering, brazing, boding with adhesive materials, primary shaping, sintering, sealing of any combination thereof." GE ('225) discloses that the connection in question is brazed (page 3, line 78).

Information Disclosure Statement

12. The information disclosure statement (IDS) submitted on July 15, 2008, is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

Specification

13. The disclosure is objected to because of the following informalities:

Appropriate correction is required.

Claim Objections

14. The following claims are objected to because of the following informalities:

- a. Claim 1, the "coating" lacks antecedent basis. There is a previously defined "coating layer."
- b. Claim 1, in the newly added limitation, the "end" of the discharge vessel should be called the "end part" for consistency of terms.
- c. Claim 6, "the end parts" lacks antecedent basis. Claim 1 only requires at least one end part.

d. Claim 6, "the end closure device" lacks antecedent basis.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

15. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

16. Claims 1 and 9 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

17. Claim 1 includes an "and/or" condition. This condition allows the coating layer to be between the end part of the discharge vessel and the sealant, *or* between the sealant and an end closure member, *or* in both places. The newly added clause further requires that the coating layer be between the sealant and the end part of the discharge vessel. This invalidates the previously defined situation where the coating layer may exist solely between the sealant and the end closure member. This contradiction creates confusion and makes the scope of the invention unclear.

18. For examination it is assumed that the coating layer must exist between the end part of the discharge vessel and the sealant, and may also be between the sealant and the end closure member.

19. Claim 9 includes an "and/or" condition. It is unclear if the second alternative of this condition is "between a sealant and an end closure member" or is "between a sealant and an end closure member and at least one end closure device and at least one feed-through."

20. For examination it is assumed that the second alternative is "between a sealant and an end closure member and at least one end closure device and at least one feed-through."

Claim Rejections - 35 USC § 102

21. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

22. Claims 1-7 and 23 are rejected under 35 U.S.C. 102(b) as being anticipated by Snellgrove et al., U.S. Patent No. 5,001,396.

23. With regard to claim 1, in figure 2, Snellgrove discloses a discharge vessel (4) with an end part (not labeled, end of 4) and a discharge cavity, characterized in that at least one coating layer (6) is located and gas-tight connected between an end part of said discharge vessel (4) and a sealant (1) and/or between a sealant (1) and an end closure member (3) wherein the coating (6) is between the sealant (1) and the end of the discharge vessel (4) (col. 3, line 63 - col. 5, line 6).

24. With regard to claim 2, in figure 2, Snellgrove discloses that the gastight bonding of the coating layer (6) to the discharge vessel (4), to a sealant (1), and/or to an end closure member (3) is stronger compared to the direct gas-tight bonding of said sealant (1) to said end closure member (3) and/or discharge vessel (4) (col. 3, line 63 - col. 5, line 6).

25. With regard to claim 3, in figure 2, Snellgrove discloses that the coating layer (6) has an expansion coefficient in the range between $4 \cdot 10^{-6} \text{ K}^{-1}$ and $12 \cdot 10^{-6} \text{ K}^{-1}$ (molybdenum) (col. 4, line 28).
26. With regard to claim 4, in figure 2, Snellgrove discloses that the coating layer (6) is chemically resistant towards oxides and iodides (col. 3, line 63 - col. 5, line 6).
27. With regard to claim 5, in figure 2, Snellgrove discloses that the coating layer (6) is of a material comprising at least Mo (col. 4, line 28).
28. With regard to claim 6, in figure 2, Snellgrove discloses that the coating layer (6) covers at least the end parts of the discharge vessel (4) of the end closure device (col. 3, line 63 - col. 5, line 6).
29. With regard to claim 7, in figure 2, Snellgrove discloses a gas-tight high-pressure burner with a coating layer (6) comprising at least one discharge vessel (4) according to claim 1 and at least one end closure device and at least one feed-through (col. 3, line 63 - col. 5, line 6).
30. With regard to claim 23, in figure 2, Snellgrove discloses that the coating layer (6) is of a material comprising at least W (col. 8, line 22).
31. Claims 10 and 21 are rejected under 35 U.S.C. 102(b) as being anticipated by GE Co., Ltd., GB 1,361,225.
32. With regard to claim 10, in the figure, GE discloses a method of manufacturing a gas-tight high pressure burner comprising at least one end closure member (2), at least two feed through members (not labeled), at least one connection means (10), at least one sealant (14) and at least one discharge vessel (1) with a coating layer (12), wherein

the manufacturing method comprises the steps: filling said discharge vessel (1) with an ionizable filling through at least one of the feed-through opening, and closing said feed-through opening by arranging a feed-through in said opening followed by gas-tight connecting said feed-through to the end closure device (2) and/or to discharge vessel with connection means, whereby a gas-tight high-pressure burner is obtained (page 2, line 1 – page 2, line 114).

33. With regard to claim 21, in the figure, GE discloses a method of assembling a lamp comprising: first sealing at least one cap (3) to a discharge vessel (1), the cap (3) comprising an opening (11), the sealing process comprising increasing temperature and/or pressure within the vessel and using a sealant (15) and a coating (13) (page 3, lines 75-93); after sealing, filling the vessel (1) with at least one desired salt and/or at least one desired filling gas, through the opening (11); positioning at least one electrode (9) in opening after the vessel is filled; and second sealing the electrode in the opening using a technique resulting in substantially less temperature and pressure increase within the vessel than was required by the first sealing, so that the sealing (15) and coating (13) from the first sealing are not damaged by temperature and pressure of the contents of the vessel (1) (page 3, lines 109-114).

Claim Rejections - 35 USC § 103

34. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

35. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Snellgrove, in view of GE.

36. All of the limitations of claim 8 are disclosed by Snellgrove, except it does not expressly disclose that the end closure member had at least one feed-though opening, whereby the feed-though opening cross-section varies along the end closure member longitudinal axis.

37. GE, in the figure, teaches a gas-tight high-pressure burner having an end closure member (2) with at least one feed through (not labeled), wherein the end closure member (2) has at least one feed-though opening, whereby the feed-though opening cross section varies along the end closure member (2) longitudinal axis (page. 3, lines 15-108).

38. At the time of invention, it would have been obvious for a person having ordinary skill in the art to construct the Snellgrove gas-tight high-pressure burner where the end closure member had at least one feed-though opening, whereby the feed-though opening cross-section varies along the end closure member longitudinal axis, as taught by GE, to create an improved seal between the feed-though member and the end closure member.

39. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Snellgrove, in view of Hendricx et al., WO 00/67294.

40. With regard to claim 9, in figure 2, Snellgrove discloses a gas-tight high-pressure burner with a coating layer (6) comprising a discharge vessel (4) with at least one end part and a discharge cavity characterized in, that at least one coating layer (6) is located

and gas-tight connected between an end part of said discharge vessel (4) and a sealant (1) and/or between a sealant (3) and an end closure member (3) and at least one end closure device and at least one feed-through (col. 3, line 63 - col. 5, line 6).

41. Snellgrove does not expressly disclose that the lamp is arranged in an automotive headlamp unit. Hendricx, in figure 1, teaches a lamp comprising a gas-tight high-pressure burner (3) that is arranged in an automotive headlamp unit (page 2, lines 8-27).

42. At the time of invention, it would have been obvious for a person having ordinary skill in the art to construct the lamp disclosed by Snellgrove in an automotive headlamp unit, as taught by Hendricx, because it has excellent color rendering and long life, characteristics making it particularly good for use in a complex shape headlamp.

43. Claims 11-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over GE, in view of Hendricx.

44. With regard to claim 11, in the figure, GE discloses a lamp, the lamp comprising a gas-tight high-pressure burner (1), the burner comprising at least one metal halide discharge vessel comprising at least one end part; and a discharge cavity; at least one end closure member (2, 3); at least one sealant (14, 15) between the end closure member (2, 3) and the end part; at least one gas-tight connection between a feed-through member (11) and the end closure member (2, 3), at least one gas-tight connected coating (12, 13) covering one or more of the end part of the discharge vessel, the sealant (12, 13), and the end closure device, gas-tight bonding of the coating being stronger than gas-tight bonding of the sealant to the end closure member

(2) and/or the discharge vessel (1) (page 1, line 78 – page 2, line 25 & page. 3, lines 15-108).

45. GE does not expressly disclose that the lamp is for use in a motor vehicle.

Hendricx, in figure 1, teaches a lamp comprising a gas-tight high-pressure burner (3) that is arranged in an automotive headlamp unit (page 2, lines 8-27).

46. At the time of invention, it would have been obvious for a person having ordinary skill in the art to construct the lamp disclosed by GE in an automotive headlamp unit, as taught by Hendricx, because it has excellent color rendering and long life, characteristics making it particularly good for use in a complex shape headlamp.

47. With regard to claim 12, all of the limitations are taught by GE and Hendricx, as discussed in the rejection of claim 11. GE further discloses that the coating layer (12, 13) has an expansion coefficient in the range between $4 \cdot 10^{-6} \text{ K}^{-1}$ and $12 \cdot 10^{-6} \text{ K}^{-1}$ (tungsten) in the range 298 K to 2174 K (page 3, line 54).

48. With regard to claim 13, all of the limitations are taught by GE and Hendricx, as discussed in the rejection of claim 11. GE further discloses that the coating layer (12, 13) is chemically resistant towards oxides and iodides (tungsten) (page 3, line 54).

49. With regard to claim 14, all of the limitations are taught by GE and Hendricx, as discussed in the rejection of claim 11. GE further discloses that the coating layer (12) comprises a material selected from the group comprising at least W, Mo, and/or Pt (tungsten) (page 3, line 54).

50. With regard to claim 15, all of the limitations are taught by GE and Hendricx, as discussed in the rejection of claim 11. GE further discloses that the sealant (14, 15) and

the connection comprise materials that are needed for welding, laser welding, resistance welding, soldering, brazing, bonding with adhesive materials, primary shaping, sintering, sealing or any combination thereof (page 3, lines 75-114).

51. With regard to claim 16, all of the limitations are taught by GE and Hendricx, as discussed in the rejection of claim 11. GE further discloses that the lamp further comprises at least one opening through the end closure and the end part (3); and at least one feed through member (11) passing through the opening, the feed through being suitable for introducing first a filling into the discharge vessel after the end closure is sealed to the discharge vessel, and second and electrode (9) after the discharge vessel is filled (page 3, lines 75-114).

52. With regard to claim 17, all of the limitations are taught by GE and Hendricx, as discussed in the rejection of claim 16. GE further discloses that the opening has an outer cross section and an inner cross section, and the outer cross section is greater than or equal to the inner cross section. (page. 3, lines 15-108).

53. Claims 18 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over GE and Hendricx, as applied to claim 11 above, and further in view of Juengst, U.S. Patent No. 6,194,832 B1.

54. With regard to claim 18, all of the limitations are taught by GE and Hendricx, as discussed in the rejection of claim 11, except neither GE, nor Hendricx discloses that the end closure is made of a functionally graded cermet material including first and second materials denominated A and B arranged such that -- in some portions -- concentration of compound A substantially increases where component B decreases

causing gradients of both A and B, while and outer layer has a constant concentration of A and B.

55. Juengst, in figure 2, teaches a high-pressure lamp where the end closure (11) is made of a functionally graded cermet material including first and second materials denominated A and B arranged such that -- in some portions -- concentration of compound A substantially increases where component B decreases causing gradients of both A and B, while and outer layer has a constant concentration of A and B (col. 5, line 41 – col. 6, line 41).

56. At the time of invention, it would have been obvious for a person having ordinary skill in the art to construct the headlight of claim 11, where the end closure is made of a functionally graded cermet material including first and second materials denominated A and B arranged such that -- in some portions -- concentration of compound A substantially increases where component B decreases causing gradients of both A and B, while and outer layer has a constant concentration of A and B, as taught by Juengst. This type of non-glass melt seal increases the lifetime of the lamp by maintaining a vacuum capable of withstanding high temperatures and not subject to corrosive attack by the fill within the discharge vessel, as taught by Juengst (col. 2, lines 55-61).

57. With regard to claim 19, in figure 2, Juengst discloses that compound A comprises Al_2O_3 and compound B comprises Mo (col. 2, line 62 - col. 3, line 1).

58. Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over Snellgrove as applied to claim 1 above, in view of itself.

59. Snellgrove discloses all of the limitations of claim 22, except it does not expressly disclose that the coating layer is made of a material comprising at least Pt.

60. Snellgrove teaches, however, that the coating material preferably does not react with the components of the fill gas, and preferably has a vapor pressure less than 0.1 torr at 1,000 C. Further examples of such metals include Mo, Ir and W. (col. 8, lines 15-22). One having ordinary skill in the art would understand that Pt would be a suitable coating material having these characteristics.

61. At the time of invention, it would have been obvious for a person having ordinary skill in the art to construct the Snellgrove discharge vessel where the coating layer is of a material comprising at least Pt, because a coating layer of this material would not react with the fill components and has a vapor pressure in the suitable range.

Conclusion

62. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thomas A. Hollweg whose telephone number is (571) 270-1739. The examiner can normally be reached on Monday through Friday 7:30am-5:00pm E.S.T..

63. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimesh Patel can be reached on (571) 272-2457. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

64. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/TH/

/Sikha Roy/
Primary Examiner, Art Unit 2879